

- Fig 4 shows ~~compressible~~ <sup>COILED</sup> spring with free height  $\pm 14$  mm, outside diameter  $\pm 9$  mm.
- Fig 5 shows spark plug ~~(tip)~~ <sup>TERMINAL</sup> with built-in slot-pins  $\pm 9$  mm in length.
- Fig 5A shows top view of spark plug ~~(tip)~~ <sup>TERMINAL</sup> with built-in slot-pins.
- Fig 6 shows new configuration of spark plug ~~(tip)~~ <sup>TERMINAL</sup> after ~~(assembly)~~ <sup>BEING ASSEMBLED</sup>
- Fig 7 shows ~~conventional~~ <sup>SPARK</sup> plug wire with stationary ~~(rubber)~~ <sup>SILICONE COVER</sup> boot.
- Fig 7A shows built-in metal clip 14, ~~(rubber)~~ <sup>SILICONE COVER</sup> boot not shown.
- Fig 8-8A shows front and rear views of new ~~embodiment~~ <sup>EMBODIMENT OF A SPARK PLUG WIRE TERMINAL WITH TWO</sup> ~~(with predetermined)~~ <sup>PREDETERMINED SLOTS</sup> and omission of metal clip 14.
- Fig 8B shows top view of Figs 8 and 8A.
- Fig 9 shows adaptor for modified spark plug ~~(tip)~~ <sup>TERMINAL</sup> and conventional spark plug wire, an alternative embodiment.
- Fig 10 shows new configuration ~~(after assembly)~~ <sup>OF SAID MODIFIED SPARK PLUG TERMINAL AND SAID MODIFIED SPARK PLUG</sup> a preferred embodiment. ~~WIRE TERMINAL BEING CONNECTED~~
- Fig 11 shows adaptor for modified spark plug ~~(tip)~~ <sup>TERMINAL</sup> and conventional spark plug wire ~~(metal clamp)~~ <sup>SAID</sup> an alternative embodiment. ~~TERMINAL BEING CONNECTED~~ <sup>A</sup>

## REFERENCE NUMERALS IN DRAWINGS

|    |  |    |   |
|----|--|----|---|
| 10 | built-in slot-pins                                 | 12 | <del>(thrust)</del> washer                                  |
| 14 | metal clip   | 16 | <del>(metal clamp)</del> <u>SPARK PLUG WIRE TERMINAL</u>    |
| 18 | <del>(rubber)</del> <sup>SILICONE COVER</sup> boot | 20 | <del>plug wire</del> <sup>SPARK</sup> <del>(-partial)</del> |
| 22 | <del>(built-in)</del> slots <u>PREDETERMINED</u>   | 24 | adaptor   |

## DETAILED DESCRIPTION

### Preferred embodiment

Drill a predetermined hole through <sup>SAID TERMINAL</sup> upper portion of a conventional spark plug tip, install ~~(compressible)~~ spring over plug ~~(tip)~~ <sup>put</sup> ~~(thrust)~~ washer on top of said spring, insert <sup>A COILED</sup> a predetermined slot-pin or cotter-pin through the hole to hold

<sup>INSTALL A</sup>

TERMINAL

said washer and spring in place. The said assemblage can also be put together with built-in slot-pins in manufacturing process of spark plugs.

METAL The ~~(spring)~~ clip in conventional plug wire ~~(metal clamp)~~ will be omitted, predetermined slots are built in ~~(metal clamp)~~ recommend material for modified SPARK PLUG WIRE TERMINAL ~~(metal clamps)~~ be superior than ~~(existing counterpart)~~ ~~(Rubber)~~ boot will be made to slide along plug wire instead of stationary, same modification can be applied to Hemi style long-reached plug wire and distributorless individual ignition coil design.

THOSE CURRENTLY USED      SILICONE COVER

#### Alternative embodiment

TERMINAL                      TERMINAL

An adaptor can be built with conventional plug ~~(tip)~~ at one end, which will fit conventional plug wire ~~(metal clamp)~~ while the other end with predetermined slots will fit in spring-loaded plug ~~(tip)~~. The advantage here is no modification needed for conventional plug wires, but non locking character still exists.

TERMINAL

#### OPERATION

The invention provides simple steps to connect and disconnect spark plug wires from spark plugs. For removal, slide rubber boot 18 ( Fig 7 ) upward to expose enough metal clamp of plug wire 20 ( Fig 8 ), press said metal clamp down, turn counter clockwise to release, since plug tip is spring-loaded, said metal clamp will be pushed out after it clears the slot pins. Compare to what mechanics are doing these days like twisting, pulling and yanking, this self-pop-up is a phenomenon. For installation, hold said metal clamp against matching slot pins (can be felt easily), once metal clamp clears said slot pins, press down and turn clockwise to lock, the spring will urge upon said metal clamp, forming a positive locking position, slide down said rubber boot firmly. With conventional snap and pull connections, even experienced mechanics can't be certain said connections are secured or just being snug, now they are black and white !

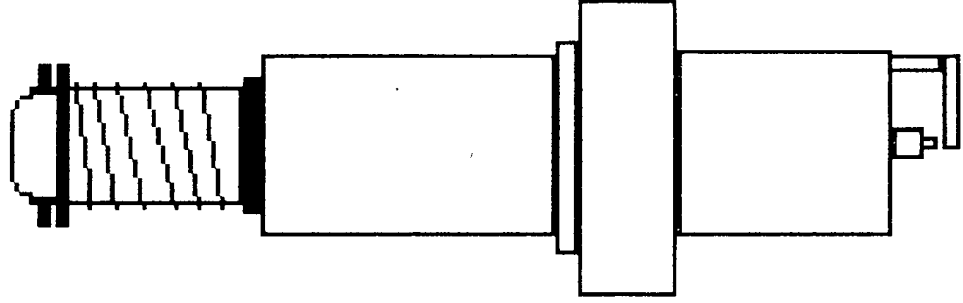


FIG. 2

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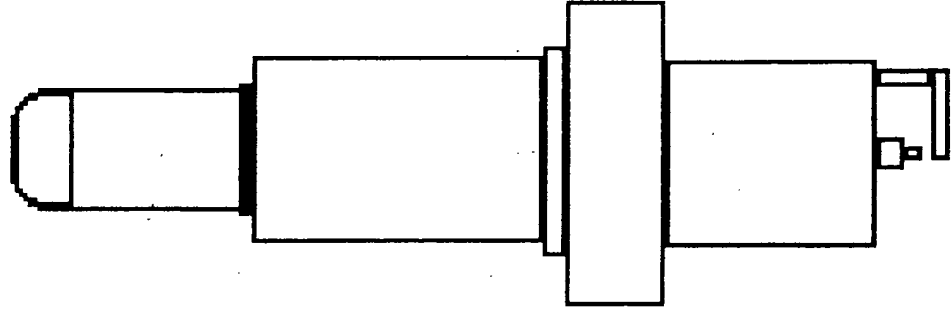


FIG. 1

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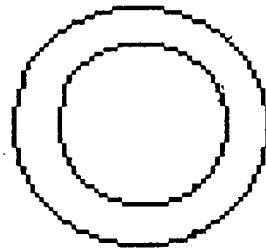


FIG. 3

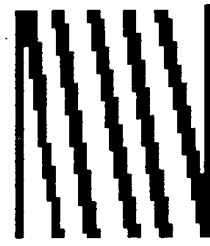


FIG. 4

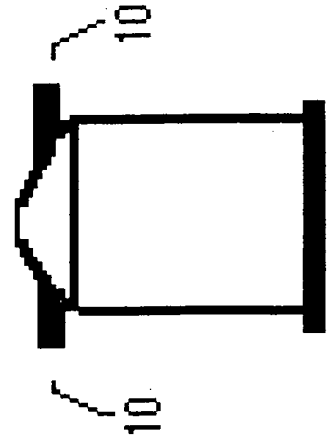


FIG. 5

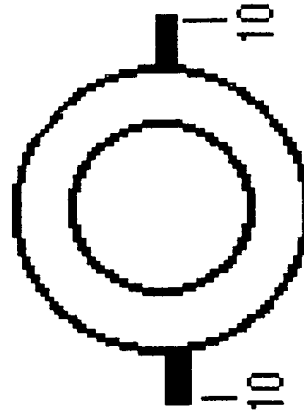


FIG. 5A

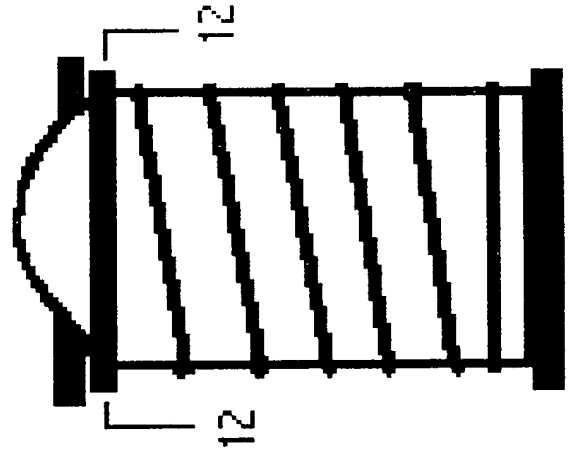


FIG. 6

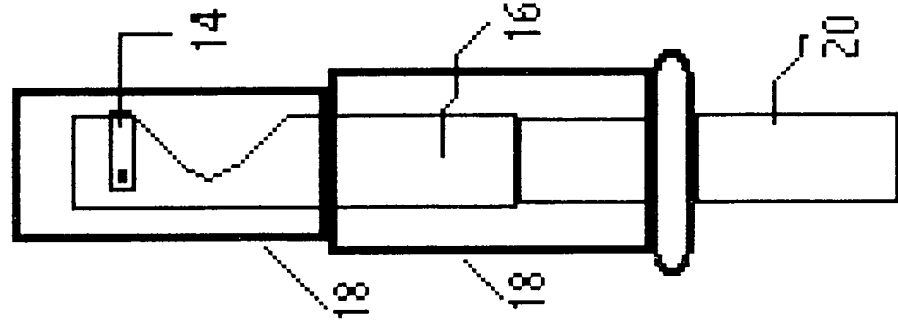


FIG. 7

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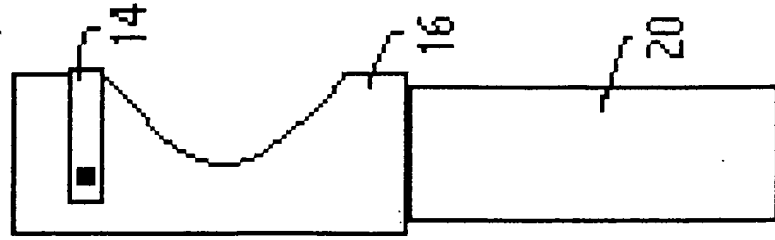


FIG. 7A

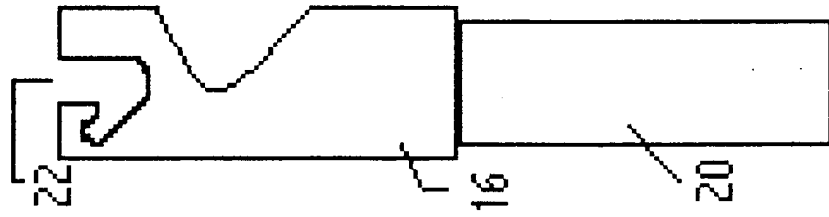


FIG. 8

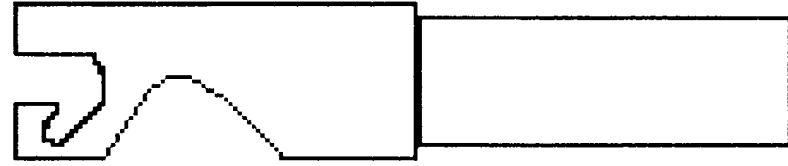


FIG. 8A

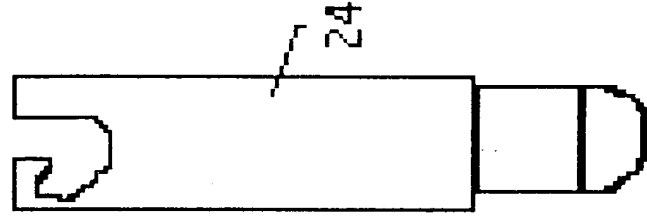


FIG. 9

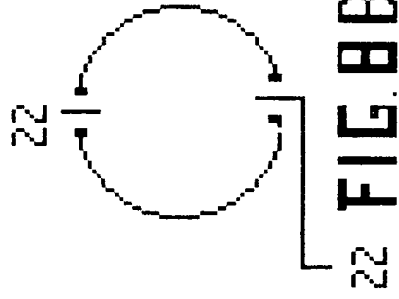


FIG. 8B

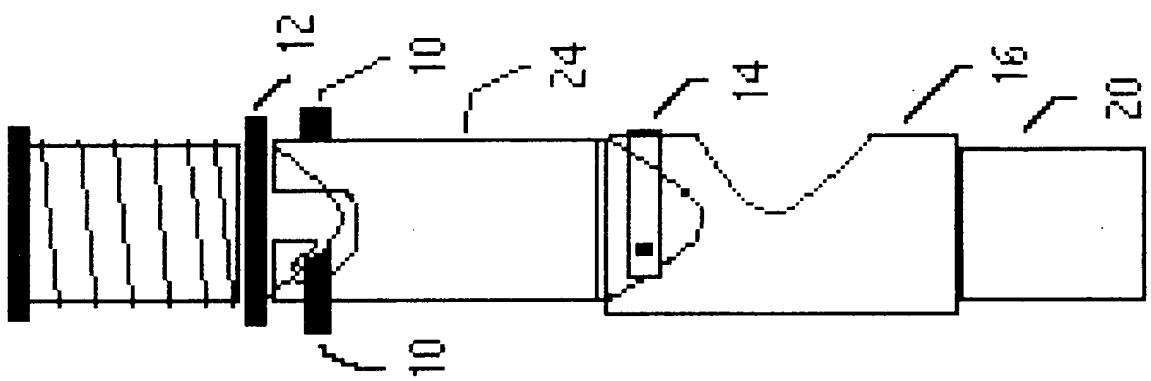


FIG. 11

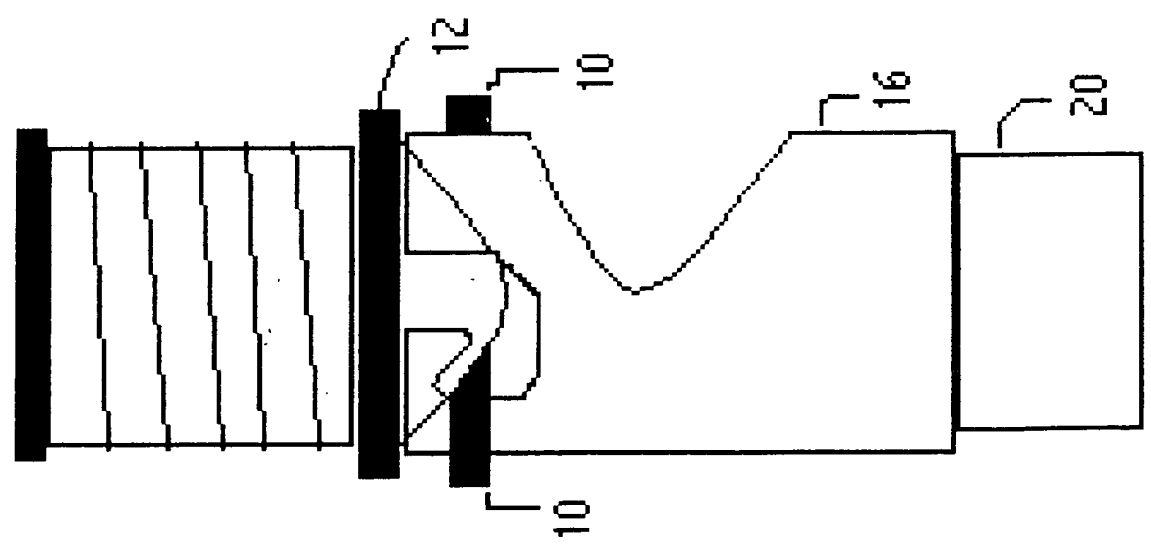


FIG. 10